

The Last Gunpowder War?

"I THINK it is probable that this will be the last great war in which we shall see gunpowder used," said Lewis Nixon, the noted shipbuilder and designer of war ships.

"The possibility of using other forces infinitely more powerful has been shown in this conflict and there will be a great effort to secure the most efficient employment of them before another struggle occurs."

Conspicuous among the novel weapons that have been used in the present war is the petrol bomb. This has the effect not only of killing all persons within immediate range of its explosion, but of setting fire to everything combustible which it touches. It is thrown with a fuse and explodes with a blinding storm of flaming gasoline.

It is much lighter than bombs of the same size containing dynamite, and is, therefore, very suitable for use by aeroplanes. Sir John French, the British commander, mentioned in an official report that one of his aviators dropped a petrol bomb on a German ammunition train, killing fifteen men and destroying the whole train. It has been stated that many Belgian and French towns have been set on fire and destroyed by petrol bombs. Even London has been in fear of destruction from this cause.

The use of poisonous gases is undoubtedly planned by military engineers. We have positive evidence that a gun designed to discharge such gases among the enemy has been patented by the Krupp firm, of Essen, and we may hear at any moment that it is in action.

It is a question whether such a weapon does not come under the clause of The Hague Convention which prohibits the use of poisons, explosive bullets and other excessively cruel weapons. The events of the present war seem to indicate, however, that not much attention will be paid to the humanitarian provisions of The Hague Convention. It may be argued that the use of poisons was forbidden for the protection of civilians and neutrals, and that the provision does not apply to a gun throwing poisonous gases at the enemy's soldiers.

The poison gun has been patented in the United States by Karl Wiesner, a German subject residing at Breideny, Germany. He states in his application that he has assigned his rights to the Krupp company.

The shell containing the poisonous gases is a great globe, which remains outside the muzzle of the gun. A shaft attached to the globe enters the gun and separates from the globe when it is fired. The globe is said to be capable of suffocating a thousand men by the gases which it emits when it explodes. The technical description of the invention says:

"The object is in the present invention reached by giving the part of the shaft whereon the weight slides a smaller dimension than that of the bore of the gun, and by supplying the shaft with an abutment or stop at the rear of this small diameter, which stop will conform with the diameter of the bore of the gun. And the smaller part of the shaft passes through a hole of the same diameter in the weight, so that, with the assistance of centering faces on the weight and on the gun, the former will be in such a position that its axis will coincide with that of the bore of the gun."

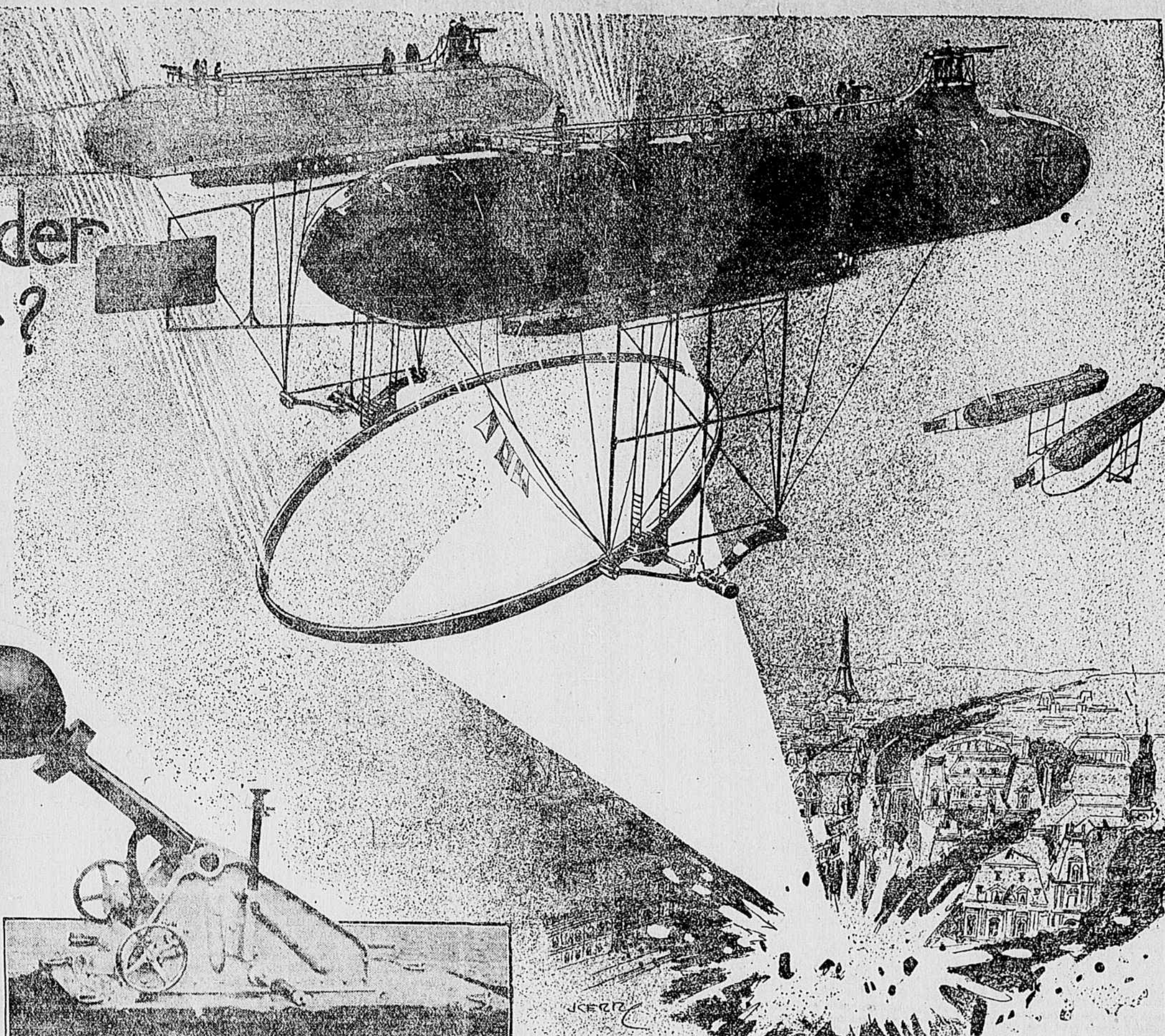
The invention is a three-piece device—the shaft, which goes into the bore of the gun; the shell, and a weight which is attached to the shaft and the gun and joins them together. When the shaft is fired, the weight retards its progress, and through that means detaches itself and the shaft from the shell, which continues in its flight.

One great object of the military inventors is the direct use of the power of the sun for purposes of destruction. They are planning to furnish aeroplanes with lenses and mirrors, by means of which the sun's rays may be concentrated on the opponent's forts, magazines and encampments.

Imagine the effect of such a titanic force burning, withering, annihilating everything over which it passes! No gun can reach it, no defence is possible. Fortresses explode, cities burn up and men shrivel into nothingness.

Such a triumph of destruction is an ancient dream of mankind, just as flying was. According to tradition, Archimedes, the Greek inventor, destroyed the ships of Marcellus which were attacking Syracuse in 214 B. C. by turning the sun's rays on them by means of concentric mirrors.

Signor Ulivi, an Italian inventor, claims to have discovered a method of controlling the infra-red rays of the spectrum so that they will ignite any explosive or combustible in a metal case. He has given demonstra-



The New Gun That Discharges Poisonous Gases, Patented by the Krupps, of Germany.



"These bombs will spread poisonous gases over an area of many square miles, in which no human being can live."

tions before the British Admiralty and the Italian army authorities. There is some doubt about the efficacy of his invention, but there is no doubt that it is based on a scientific idea.

Ulivi is said to have exploded a submarine mine under the River Arno from a distance of five miles. He grinds out the rays from what appears to be a static electric machine and holds a wireless telephone to

his ear, which tells him when his rays have struck a distant metallic object. He asserts that his invention will cause the explosion of all ammunition, torpedoes, bombs, warships, gasometers, etc. It will wreck all iron steamships, railroad locomotives and cars, iron bridges and all other metallic constructions.

Signor Ulivi's invention bears a resemblance to the methods used by the Martians in their invasion of the

"Airships will carry vast lenses that will concentrate the rays of the sun, withering and destroying everything beneath them."

earth, as described by H. G. Wells. These monstrous, octopus-like creatures controlled heat rays with which they withered and devastated everything that opposed them. They were not stopped until an earthly inventor infected them with disease microbes which they had never known on Mars. This use of microbes, by the way, would be contrary to the rules of The Hague Convention, but probably

the Martians would be counted outside the pale of humanity.

Wells has suggested another scientific weapon which would cause world-wide devastation and so make war impossible. He assumes that we shall discover the secret of atomic energy, a force which we can see at work in radium. The atomic bomb releases the energy of matter and causes everything it touches to explode.

Science is Now Creating Weapons Far More Deadly, That Will Annihilate Life Throughout Whole Countries in Future

In the words of Wells:

"Never before in the history of warfare had there been a continuing explosive; indeed, up to the middle of the twentieth century the only explosives known were combustibles whose explosiveness was due entirely to their instantaneousness; and these atomic bombs which science burst upon the world that night were strange even to the men who used them. Those used by the Allies were lumps of pure carborundum, painted on the outside with unoxidized cydonator inductive enclosed hermetically in a case of membranum. A little celluloid stud between the handles by which the bomb was lifted was arranged so that it could be easily torn off and admit air to the inductive, which at once became active and set up radio-activity in the outer layer of the carborundum sphere. This liberated fresh inductive, and so in a few minutes the whole bomb was blazing continual explosion."

"Such was the crowning triumph of military science, the ultimate explosive, that was to give the 'decisive touch' to war."

It is certain that there are infinite powers of destruction in the wireless waves with which we are partly familiar. A wireless generating plant raised to several thousand times the power now employed will be able to destroy life and property at a distance of a thousand miles or more.

Another novel implement of destruction will be an enormous fly-wheel armed with scythe-like blades, which will cut down every human being in their path. Everybody familiar with machinery knows the terrific power of a heavy flywheel in motion. It is proposed that the wheels shall be carried in large aeroplanes and dirigible balloons. The cutting blades will be arranged at an angle so that they will increase the revolutions of the wheel as it falls through the air.

The man in the machine will drop the wheel over a force of the enemy and then, after gaining terrific momentum, it will go churning through their bodies with its long, curved knives. In this way a trench could be cleared of life or a whole encampment swept away.

All these methods of slaughter will, it is hoped, hasten the day when no nation will dare to go to war because it will threaten the very existence of the human race.

"Growing Pains" and "Tennis Elbow" Due to Decayed Teeth

RECENT medical discoveries showing the close relationship between decayed teeth and rheumatism, through the medium of germs and toxins flowing into the digestive tract from pus sacs in the diseased teeth and gums, are familiar to readers of this newspaper. The further medical science inquires into the matter the more it is inclined to attribute many other stubborn ills of the human body to the same cause—defective teeth and poison-discharging pustules in the gums.

These discoveries have added new terrors to pyorrhea, commonly called Rigg's Disease, in which the gums fall away from the roots of the teeth and the whole area becomes a breeding ground of germs seriously affecting the general health, owing to the impossibility of keeping them out of the stomach and intestines.

In an article contributed to the London Lancet, of recent date, the writer—a laboratory experimenter along these lines—attributes that mystery of childhood called "growing pains," to this same cause. These pains in the bones of the arms and legs, he explains, are always associated with an infected condition of the intestines, as is rheumatism. But the germs—streptococci—which are responsible for this condition do

not originate in the intestines, as formerly was the theory, but in the decayed teeth and diseased gums of the victim.

"Growing pains" occur in cases where the physiological output of young people, to meet the tyrannical demands of growth, is at its highest. Their resistance to these germs is therefore at its lowest. Stubborn pains in the bony structure are manifestations of those germ-toxins in the circulation.

It was natural that formerly this class of disturbances—following the general acceptance of the germ theory of disease—should be attributed to the activity of germs originating in the intestines—the waste pipes of the body where all sorts of microbes and poisons are naturally expected to exist. Suspicion that this theory was erroneous grew out of the fact that sterilization of the entire alimentary canal only temporarily allayed rheumatic and other symptoms.

Experiments proved that these germs had a source higher up, and this source was finally discovered in the mouth that supplied a steady flow of them from tooth cavities and pus sacs in the gums. So it was useless to continue drastic antiseptic treatment of the intestines while the mouth kept up its supply of the poisonous material.

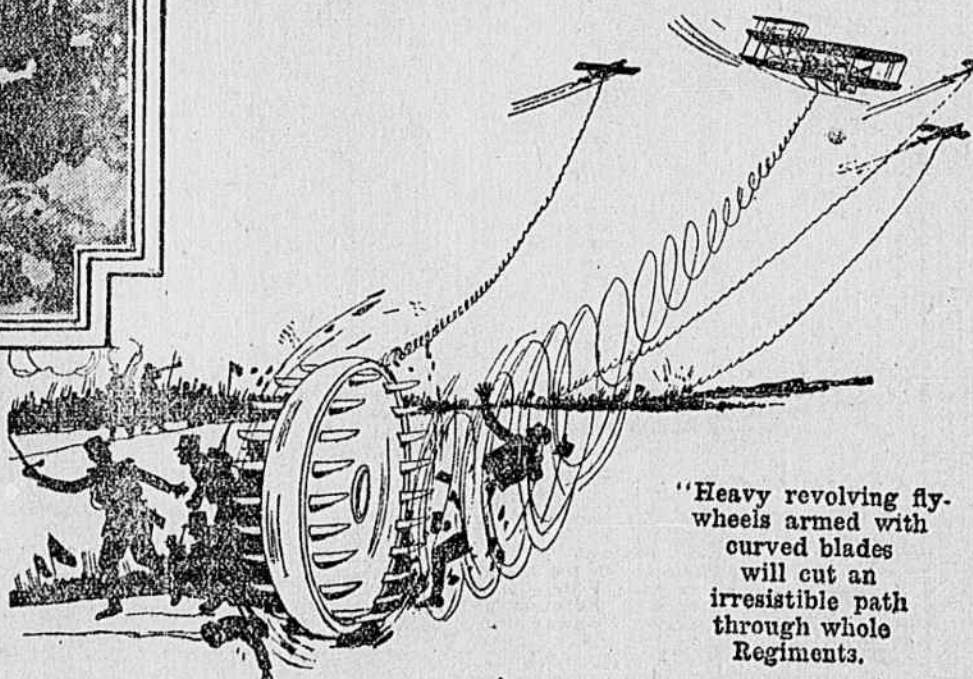
Among the many diseases for which bad teeth are now held responsible are: Chronic inflammation of the pharynx, disease of the middle ear, mastoiditis, gastritis, gastric ulcer, anaemia, gout, neuritis, even "tennis elbow" and writers' and telegraphers' cramp. Medical reports show that "tennis elbow" disappeared when the fangs of a dead tooth were rendered aseptic.

The explanation is that the poisons generated in the digestive tract by these germs of dental origin set up chronic inflammation of the connective tissues between the bundles of nerve cells in the overworked area—just as they cause inflammations resulting in children's "growing pains" when the child's nutritive processes are overworked to build up a larger frame.

The disquieting feature of the whole matter is that teeth and gums which appear to be perfectly healthy yet may be breeders of this mischievous germ. On this topic the Lancet writer says:

"Not once but many times recently I have found this organism about the fangs of teeth which, apparently sound, showed on extraction denuded periosteum and sepsis of the alveolar cavity communicating with pockets about the neck of the tooth."

"It is not, however, to this particular class of dental cases that I wish to draw the attention of your readers, but rather to a series of cases of less evident virulence which ought to be the study of every practitioner—those cases where it is about the tips of the teeth, themselves frequently healthy in appearance, often stopped or crowned, the streptococcus salivarius is actively secreting a toxin which it pours in a steady stream into the area around the fangs. This organism does not cause pus formation. It is found in small fibrous sacs attached to the periodontal membrane, and its action seems to be formative rather than destructive. The effects of its growth are shown wherever connective or fibrous tissues are in a state of enhanced activity or where such structures have been injured or overstrained."



"Heavy revolving flywheels armed with curved blades will cut an irresistible path through whole Regiments."